

PATENT COOPERATION TREATY

From the
INTERNATIONAL SEARCHING AUTHORITY

To:
SEMICONDUCTOR ENERGY LABORATORY
CO., LTD.

398, Hase, Atsugi-shi, Kanagawa
2430036 Japan

PCT

WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY
(PCT Rule 43bis.1)

Date of mailing
(day/month/year) **05.7.2005**

Applicant's or agent's file reference
00000PCT7793

FOR FURTHER ACTION

See paragraph 2 below

International application No.
PCT/JP2005/006207

International filing date (day/month/year)
24.03.2005

Priority date (day/month/year)
26.03.2004

International Patent Classification (IPC) or both national classification and IPC
Int.Cl.⁷ H01L21/268, 21/20, 21/336, 29/786

Applicant
SEMICONDUCTOR ENERGY LABORATORY CO., LTD.

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☒ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Date of completion of this opinion		21.06.2005	
Japan Patent Office 3-4-3, Kasumigaseki, Chiyoda-ku, Tokyo 100-8915, Japan		Authorized officer	
		Shuji Hagiwara Telephone No. +81-3-3581-1101 Ext. 3498	
		4L	9835

WRITTEN OPINION OF THE
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Box No. I Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language _____, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application

☒ claims Nos. 2,6,9-13

because:

☐ the said international application, or the said claims Nos. _____

relate to the following subject matter which does not require an international preliminary examination (*specify*):

☐ the description, claims or drawings (indicate particular elements below) or said claims Nos. _____ are so unclear that no meaningful opinion could be formed (*specify*):

☐ the claims, or said claims Nos. _____ are so inadequately supported by the description that no meaningful opinion could be formed.

☒ no international search report has been established for said claims Nos. 2,6,9-13

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing do not comply with the technical requirements provided for in Annex C-bis of the Administrative Instructions in that the computer readable form:

☐ has not been furnished

☐ does not comply with the technical requirements

☐ See Supplemental Box for further details.

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Box No. IV Lack of unity of invention

1. In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:

- ☐ paid additional fees
☐ paid additional fees under protest
☒ not paid additional fees

2. ☐ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.

3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is

- ☐ complied with
☒ not complied with for the following reasons:

The same or corresponding matters(A) between the inventions of claims Nos. 1-13 are "blocking a low-intensity part of a laser beam emitted from a laser oscillator by making the laser beam pass through a slit; and projecting an image formed at the slit to an irradiation surface by a convex lens; wherein the laser beam is shaped into a linear beam on the irradiation surface."

However, after taking the prior art into consideration, it became apparent that the matters(A) were mentioned in a document JP 2003-142401 A (SEMICONDUCTOR ENERGY LABORATORY CO), 2003.05.16, the whole document. Therefore, the matters(A) makes no contribution over the prior art.

Consequently, there is no same or corresponding "special technical features" which is the expression in the PCT Rule 13.2. Therefore, there is no technical relationship between the inventions of claims Nos. [1-8,13] and [9-12].

The same or corresponding matters(B) between the inventions of claims Nos. 1-8,13 are " blocking a low-intensity part of a laser beam emitted from a laser oscillator by making the laser beam pass through a slit; and projecting an image formed at the slit to an irradiation surface by a convex lens; wherein the laser beam is shaped into a linear beam on the irradiation surface."

However, after taking the prior art into consideration, it became apparent that the matters(B) were mentioned in a document JP 2003-142401 A (SEMICONDUCTOR ENERGY LABORATORY CO), 2003.05.16, the whole document. Therefore, the matters(B) makes no contribution over the prior art.

Consequently, there is no same or corresponding "special technical features" which is the expression in the PCT Rule 13.2. Therefore, there is no technical relationship between the inventions of claims Nos. [1,3-5,7,8] and [2,6,13].

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☐ all parts.
☒ the parts relating to claims Nos. 1,3-5,7,8

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	<u>4,8</u>	YES
	Claims	<u>1,3,5,7</u>	NO
Inventive step (IS)	Claims		YES
	Claims	<u>1,3-5,7,8</u>	NO
Industrial applicability (IA)	Claims	<u>1,3-5,7,8</u>	YES
	Claims		NO

2. Citations and explanations

D1:JP 2003-142401 A (SEMICONDUCTOR ENERGY LABORATORY CO) 2003.05.16, the whole document, fig.1-18

D2:JP 2003-289080 A (SEMICONDUCTOR ENERGY LABORATORY CO) 2003.10.10, the whole document, fig.1-21

Novelty: Concerning claims 1,3,5,7

The subject matters of claim 1,3,5,7 do not appear to involve a novelty with respect to the cited document D1.

The cited document D1 (figs.1) discloses a laser irradiation method comprising: blocking a low-intensity part of a laser beam emitted from a laser oscillator by making the laser beam pass through a slit; and projecting an image formed at the slit to an irradiation surface by a convex cylindrical lens; wherein a mirror for bending a traveling direction of the laser beam by a predetermined angle is provided between the laser oscillator and the slit, and wherein the laser beam is shaped into a linear beam on the irradiation surface.

Inventive Step: Concerning claims 4,8

The subject matters of claim 4,8 do not appear to involve an inventive step with respect to the cited document D1 and D2.

The cited document D2 (figs.1,2) discloses a laser irradiation apparatus comprising: a second convex is provided between the cylindrical lens and the irradiation surface in such a way that the second convex cylindrical lens is rotated by 90° from the convex cylindrical lens.

On the basis of this disclosure of D4, a person skilled in the art could easily realized a laser irradiation method and a laser irradiation apparatus comprising: a second convex is provided between the cylindrical lens and the irradiation surface in such a way that the second convex cylindrical lens is rotated by 90° from the convex cylindrical lens.